

# 12HG7

## Sharp-Cutoff Pentode

FRAME-GRID CONSTRUCTION

T9 ENVELOPE

9-PIN LARGE-BUTTON NEONVAL BASE

For Video Output Amplifier Service  
in Color TV Receivers

### Electrical:

Heater Characteristics and Ratings:

Heater-section arrangement	Series	Parallel	
Voltage (AC or DC) . . . . .	$12.6 \pm 1.3^a$	$6.3 \pm 0.6$	volts
Current . . . . .	0.260	$0.520^b$	amp
Maximum heater-cathode voltage:			
Heater negative with respect to cathode . . . . .	200		volts
Heater positive with respect to cathode:			
Peak . . . . .	200		volts
DC component . . . . .	100		volts

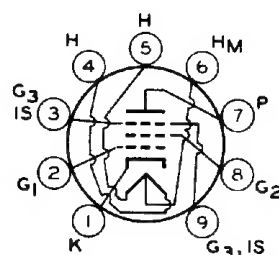
Direct Interelectrode Capacitances:<sup>c</sup>

Grid No.1 to plate . . . . .	0.15 max.	pf
Input: G1 to (K,G3+IS,G2,H) . . . . .	14.0	pf
Output: P to (K,G3+IS,G2,H) . . . . .	4.4	pf

### Mechanical:

Operating Position . . . . . Any  
Type of Cathode . . . . . Coated Unipotential  
Maximum Overall Length . . . . . 2.930"  
Maximum Seated Length . . . . . 2.620"  
Length, Base Seat to Bulb Top (Excluding tip) . . . . . 2.070" to 2.310"  
Diameter . . . . . 1.062" to 1.188"  
Dimensional Outline . . . . . (JEDEC No.9-70)  
Bulb . . . . . T9  
Base . . . . . Large-Button Neonval 9-Pin (JEDEC No.E9-68)  
Basing Designation for BOTTOM VIEW . . . . . 9BF

Pin 1-Cathode  
Pin 2-Grid No.1  
Pin 3-Grid No.3,  
Internal Shield  
Pin 4-Heater  
Pin 5-Heater  
Pin 6-Heater Tap  
Pin 7-Plate  
Pin 8-Grid No.2  
Pin 9-Grid No.3,  
Internal Shield



### Characteristics, Class A<sub>1</sub> Amplifier:

Plate Supply Voltage . . . . .	300	volts
Grid No.3 . . . . .	Connected to cathode at socket	
Grid-No.2 Supply Voltage . . . . .	135	volts
Grid No.1 . . . . .	Connected to negative end of cathode resistor	
Cathode Resistor . . . . .	47	ohms
Plate Resistance (Approx.) . . . . .	60000	ohms
Transconductance . . . . .	32000	$\mu$ mhos
Plate Current . . . . .	31	ma



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Grid-No.2 Current . . . . . 4.8 ma  
Grid-No.1 Voltage (Approx.)  
for plate  $\mu a = 100$ . . . . . -4.5 volts

## CLASS A<sub>1</sub> AMPLIFIER

### Maximum Ratings, Design-Maximum Values:

Plate Voltage . . . . . 400 volts  
Grid-No.2 (Screen-Grid) Supply Voltage. . . . . 330 volts  
Grid-No.2 Voltage . . . . . See *Grid-No.2 Input Rating Chart*  
at front of Receiving Tube Section  
Grid-No.1 (Control-Grid) Voltage:  
Positive-bias value . . . . . 0 volts  
Grid-No.2 Input:  
For grid-No.2 voltages up to 165 volts. . . . . 1 watt  
For grid-No.2 voltages between  
165 and 330 volts . . . . . See *Grid-No.2 Input Rating Chart*  
at front of Receiving Tube Section  
Plate Dissipation . . . . . 10 watts

### Maximum Circuit Values:

Grid-No.1-Circuit Resistance:  
For fixed-bias operation. . . . . 0.1 megohm  
For cathode-bias operation. . . . . 0.25 megohm

<sup>a</sup> At heater amperes = 0.260.

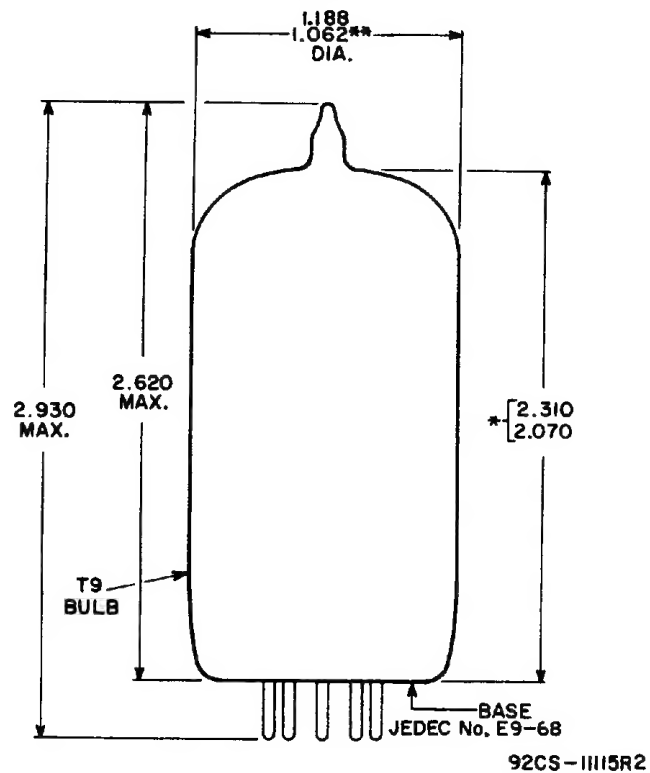
<sup>b</sup> At heater volts = 6.3.

<sup>c</sup> Without external shield.



## DIMENSIONAL OUTLINE

JEDEC No. 9-70



DIMENSIONS IN INCHES

\*\* Applies in zone starting 0.375" from base seat.

\* Measured from base seat to bulb-top line as determined by a ring gauge of 0.600" inside diameter.

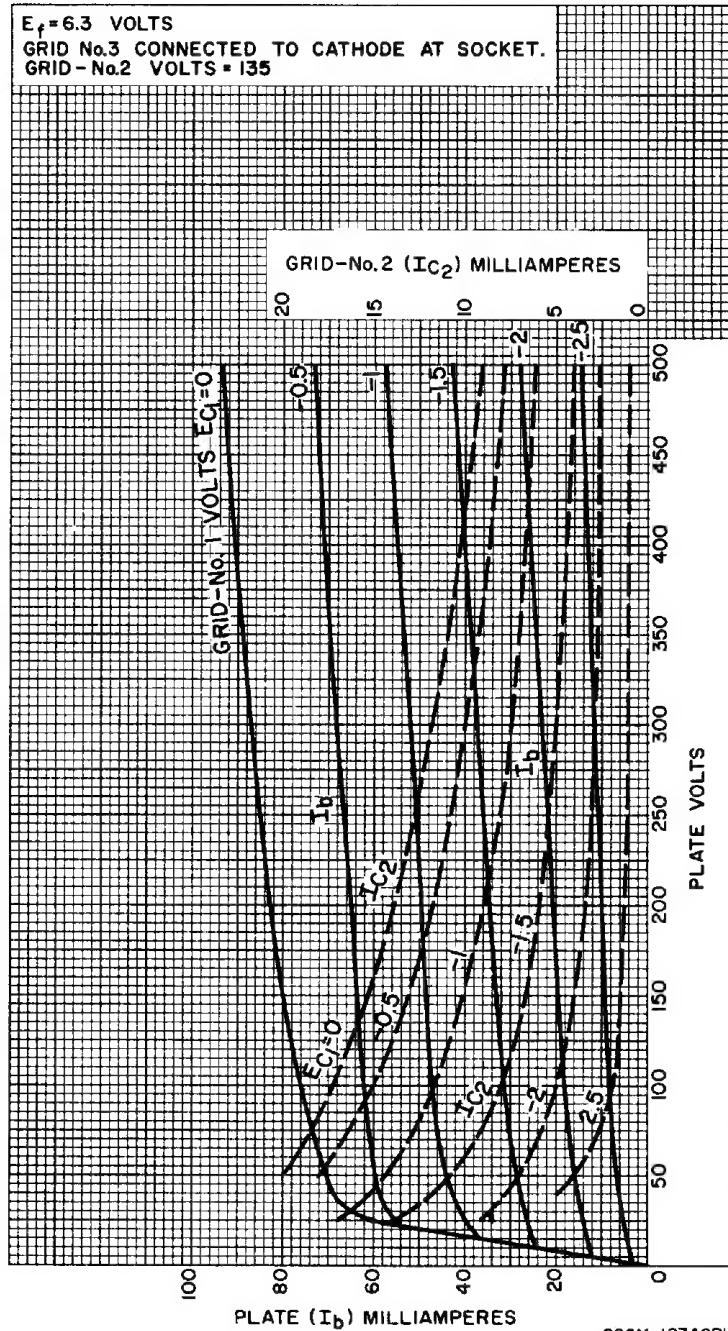


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## AVERAGE CHARACTERISTICS



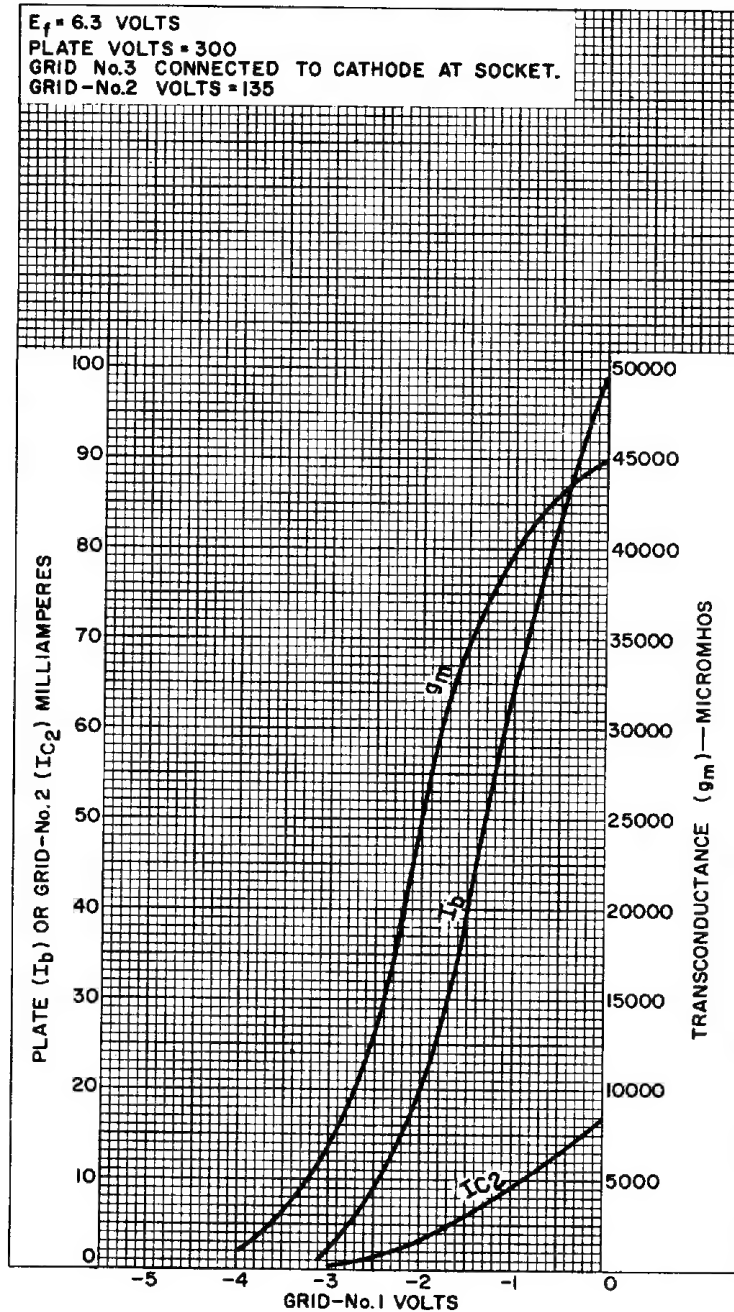
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## AVERAGE CHARACTERISTICS



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